

REMARKS

Initially, in the Office Action dated August 8, 2005, the Examiner has objected to the title as not being descriptive. Claims 6, 7 and 11-19 have been rejected under 35 U.S.C. §112, second paragraph. Claim 1 has been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,760,765 (Asai et al.). Claims 2-4 and 17-19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Asai et al. in view of U.S. Patent No. 6,681,339 (McKean et al.). Claims 5-16, 20 and 21 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

By the present response, Applicants have canceled claim 2 without disclaimer. Moreover, Applicants have amended claims 1, 5 -7, 11, 15 and 19 to further clarify the invention. Claims 1 and 3-21 remain pending in the present application.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 5-16, 20 and 21 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and that claims 6, 7 and 11-16 would be allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph and to include all of the limitations of the base claim and any intervening claims.

Specification Objections

The Examiner has indicated that the title of the invention is not descriptive and has required a new title. Applicants have provided a new title of the invention to comply with this request and respectfully request that this objection be withdrawn.

35 U.S.C. §112 Rejections

Claims 6, 7, 11-16 and 17-19 have been rejected under 35 U.S.C. §112, second paragraph. Applicants have amended the claims to further clarify the invention and respectfully request that these rejections be withdrawn.

35 U.S.C. §102 Rejections

Claim 1 has been rejected under 35 U.S.C. §102(e) as being anticipated by Asai et al. Applicants respectfully traverse this rejection.

Asai et al. discloses a cluster server apparatus operable to continuously carrying out data distribution to terminals even if among a plurality of cache servers of the cluster server apparatus cache server, while optimally distributing loads on the plurality of cache servers. A cluster control unit of the cluster server apparatus distributes requests from the terminals based on the load of each of the plurality of cache servers. A cache server among the plurality of cache servers distributes, requested data to a terminal if the requested data is stored in a streaming data storage unit of the cache server, while distributing data from a contents server the requested data if it is not stored in the streaming data storage unit. The data distributed from the contents server is redundantly stored in the respective streaming data storage units of two or more cache servers. If one cache server becomes

unable to carry out distribution, the other cache server continues data distribution instead.

Applicants submit that Asai et al. does not disclose or suggest the limitations in the combination of claim 1 of, inter alia, a storage system connected to a computer that includes a first control unit, a second control unit, a third control unit and a plural storage units where the first control unit, the second control unit, and the third control unit each has a memory, and the first control unit stores data received from the computer in the memory possessed by the first control unit and the memory possessed by the second control unit. As the Examiner admits, Asai et al. teaches a cluster server apparatus. This is not a storage system connected to a computer, as recited in the claims of the present application. As is clear from the abstract and other parts of the disclosure of Asai et al., Asai et al. is clearly directed to a cluster server apparatus. Further, Asai et al. discloses the cluster server apparatus being operatively connected to a plurality of terminals. This is not a storage system or specifically a storage system connected to a computer, as recited in the claims of the present application.

Moreover, Applicants submit that Asai et al. does not disclose or suggest a first control unit, a second control unit or a third control unit and a plurality of storage units included in the storage system, as recited in the claims of the present application. The Examiner asserts that the first control unit, second control unit, and third control unit are disclosed in Asai et al. by the cache servers 10-1, 10-2 and 10-3, respectively. However, these portions of Asai et al. merely disclose cache servers

that are part of a cluster server apparatus 10 (see col. 12, lines 11-17). These are not control units that are part of a storage system connected to a computer, as recited in the claims of the present application. Asai et al. relates to a server apparatus and has nothing to do with a storage system.

Consequently, since the cache servers in Asai et al. are not control units as recited in the claims of the present application, Asai et al. does not disclose or suggest a first control unit that stores data received from the computer in the memory possessed by the first control unit and the memory possessed by the second control unit, as recited in the claims of the present application.

In addition, Asai et al. does not disclose or suggest where the first control unit stores the data received from the computer in the memory possessed by the first control unit and the memory possessed by the third control unit in a case where the second control unit becomes unusable.

Accordingly, Applicants submit that Asai et al. does not disclose or suggest the limitations in the combination of claim 1 of the present application. Applicants respectfully request that this rejection be withdrawn and that this claim be allowed.

35 U.S.C. §103 Rejections

Claims 2-4 and 17-19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Asai et al. in view of McKean et al. Applicants respectfully traverse these rejections.

McKean et al. discloses structure and method for efficient failover and fallback techniques in a data storage system utilizing a dual-active controller configuration for

minimizing a delay in responding to I/O requests from a host system following a controller failure. A stripe lock data structure is defined to maintain reservation status or stripe locks of cache lines within data extents that are part of a logical unit or storage volume. When a controller fails, dirty cache line data of a failed controller is taken over by a survivor controller. The stripe lock data structure is used to process I/O requests from a host system, by the failed controller. The data storage system functions in a single-active configuration until the dirty cache line data is flushed to one or more storage volumes, by the survivor controller.

Applicants submit that claims 2-4 and 17-19 are dependent on independent claim 1 and, therefore, are patentable at least for the same reasons noted previously regarding this independent claim. Applicants submit that McKean et al. does not overcome the substantial defects noted previously regarding Asai et al. For example, Applicants submit that none of the cited references disclose or suggest where the first control unit receives the data from the computer instead of the second control unit when the second control unit becomes unusable and the first control unit stores the received data in the memory possessed by the first control unit and the memory possessed by the third control unit.

Accordingly, Applicants submit that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of each of claims 2-4 and 17-19 of the present application.

Applicants respectfully request that these rejections be withdrawn and that these claims be allowed.

U.S. Application No. 10/648,291

In view of the foregoing amendments and remarks, Applicants submit that claims 1-21 are now in condition for allowance. Accordingly, early allowance of such claims is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger, Malur & Brundidge, P.C., Deposit Account No. 50-1417 (referencing attorney docket no. 520.43077X00).

Respectfully submitted,

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